IN THE CLAIMS

1. (Currently Amended) A method for reducing distortion in charged particle lithographic masks, comprising the steps of:

adding a dummy fill shape in an unexposed region of a mask; and

applying a blocking layer to the region of the dummy fill shape so as to prevent the printing of the dummy fill shape.

2. The method of claim 1 wherein the blocking layer is an aperture.

3. The method of claim 2 where the step of applying further comprises sliding an aperture over the dummy shape.

4. The method of claim 2 wherein the aperture is adjustable.

5. The method of claim 1 where the step of applying blocking layer occurs by using a second mask with an opaque region where the dummy fill shape is.

6. The method of claim 1 where the step of applying the blocking layer occurs by depositing a low stress material that covers the dummy fill shape.

7. The method of claim 1 where the step of applying the blocking layer occurs by forming a second membrane layer on the mask and patterning the membrane.

8. The method of claim 7 wherein the blocking layer is created by using a SOI starting substrate.

9. The method of claim 1 where the step of applying the blocking layer occurs after a stencil mask is fabricated.

10. The method of claim 9 where the blocking layer is fabricated by first applying thin support layer over the stencil mask.

11. A charged particle lithographic device, which comprises:

a dummy shape in an unexposed region of a mask; and

a blocking layer covering the dummy shape in such a manner as to prevent the dummy shape from printing.

12. The device of claim 11, wherein the blocking layer is a structure separate from the mask.

13. The device of claim 12, wherein the separate structure is an aperture.

14. The device of claim 12, wherein the separate structure is an additional mask.

15. The device of claim 13, wherein, the aperture is adjustable.

16. The device of claim 14 wherein the additional mask has an opaque region where the dummy fill shape is.

17. The device of claim 11 wherein the blocking layer is a low stress material deposited in a region on the mask covering the dummy fill shape.

18. The device of claim 11 wherein the blocking layer is deposited on a second membrane layer on the mask.

19. The device of claim 18 wherein the blocking layer is created by using a SOI starting substrate.

20. (Currently Amended) The method of claim 919 wherein the blocking layer is fabricated on a stencil mask.

REJECTION OF CLAIMS 1-10 AND 20 UNDER 35 U.S.C. SECTION 102(b)

In the current Office Action, the Examiner rejected claims 1-10 and 20 under 35 U.S.C. Section 102(b) as being anticipated U.S. Patent No. 5,942,760 to Thompson et. Al (hereinafter referred to as Thompson I) and U.S. Patent No. 6,221,537 to Thompson et al. (hereinafter referred to as Thompson II).

Applicant's Present Invention

Applicant's present invention is a method and device for overcomming distortion that results from intrinsic stress in the membrane or scattering material of a mask (See Background). More specifically, Applicant's present invention, uses dummy fill shapes in an unexposed region of the mask, and applies a blocking layer over the dummy fill shapes so as to prevent the dummy fill shapes from printing.

Thompson I

Thompson I discloses a method of protecting the patterned scattering layer 208 by incorporating a encapsulating layer 210 over the patterned scattering layer (Col 4 lines 34-40) (i.e. allows for efficient cleaning of the mask). Thompson I, however, fails to disclose the use of dummy fill shapes or the use of a blocking layer to prevent the dummy fill shapes from printing as now claimed by Applicants.

Thompson II

Thompson II discloses a method for creating a lithographic mask (see Abstract). Thompson II, however, fails to disclose the use of dummy fill shapes or the use of blocking layer to prevent the dummy fill shapes from printing as now claimed by Applicants.